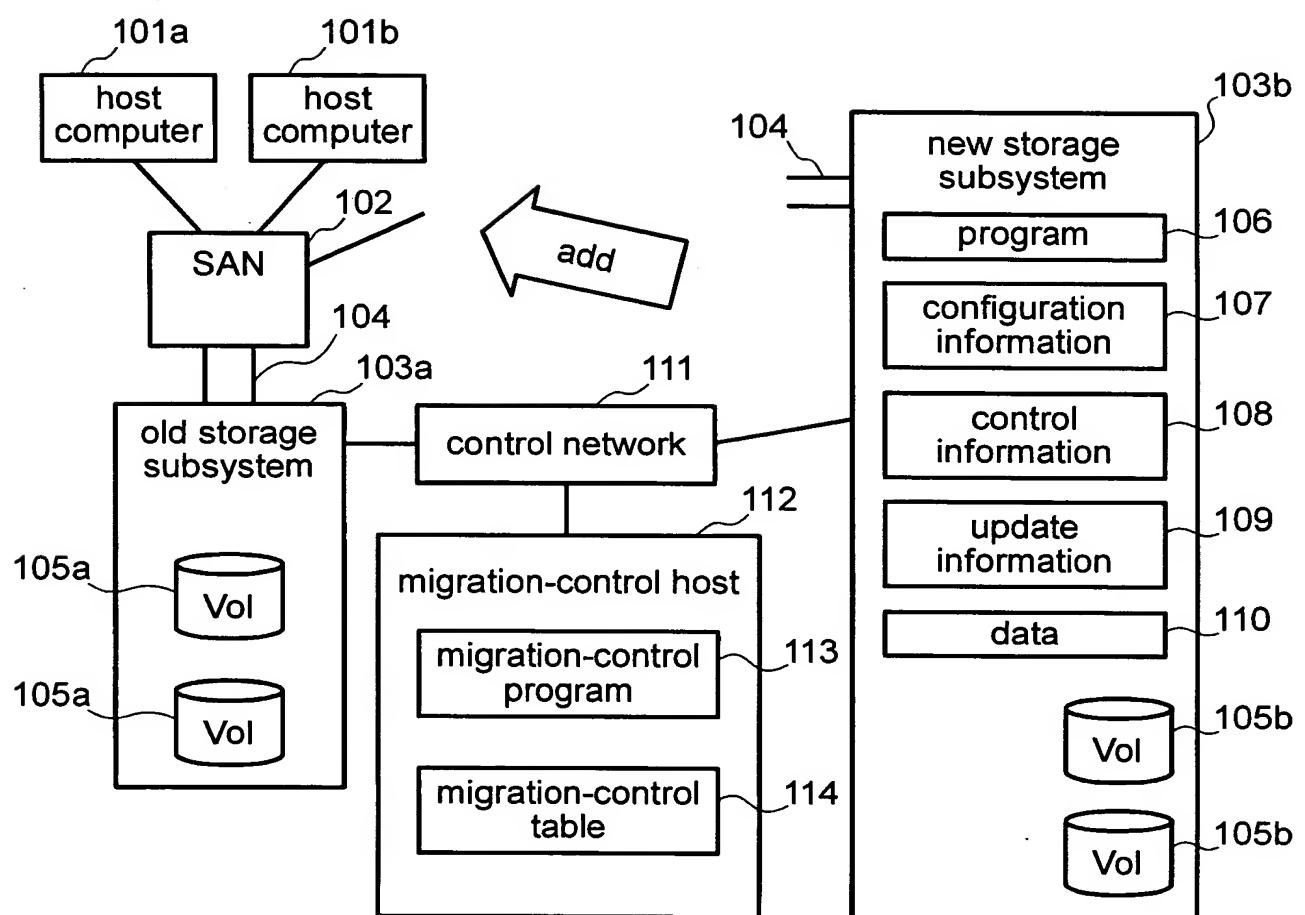
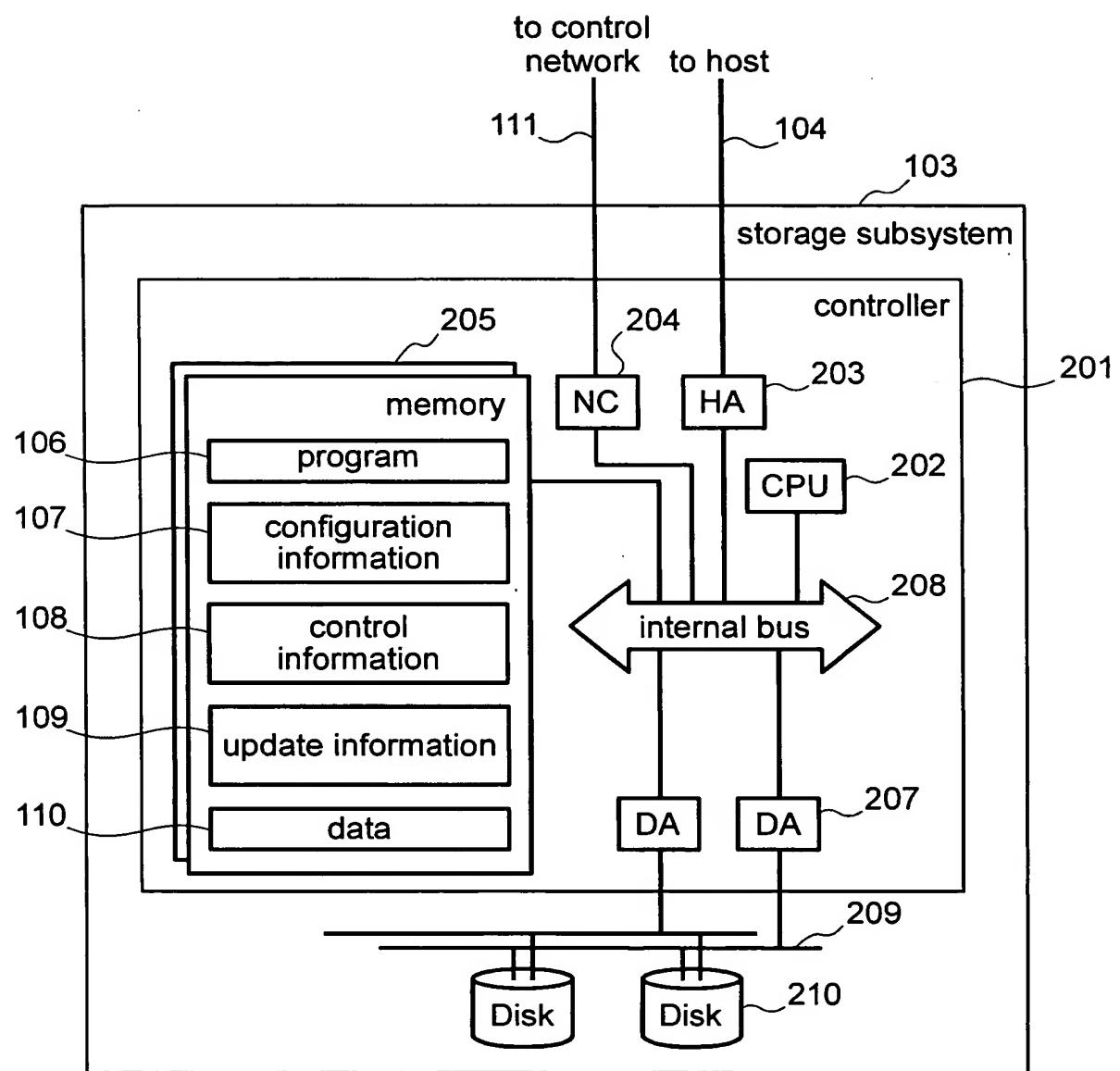


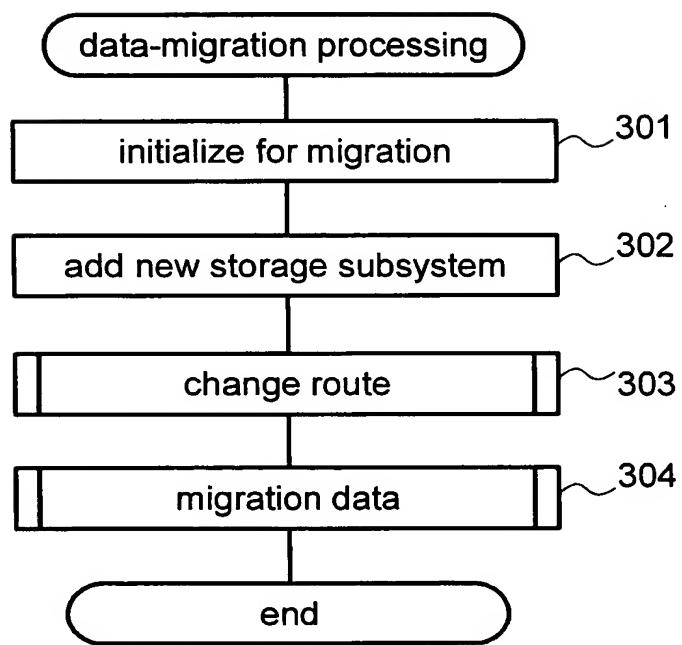
# FIG.1



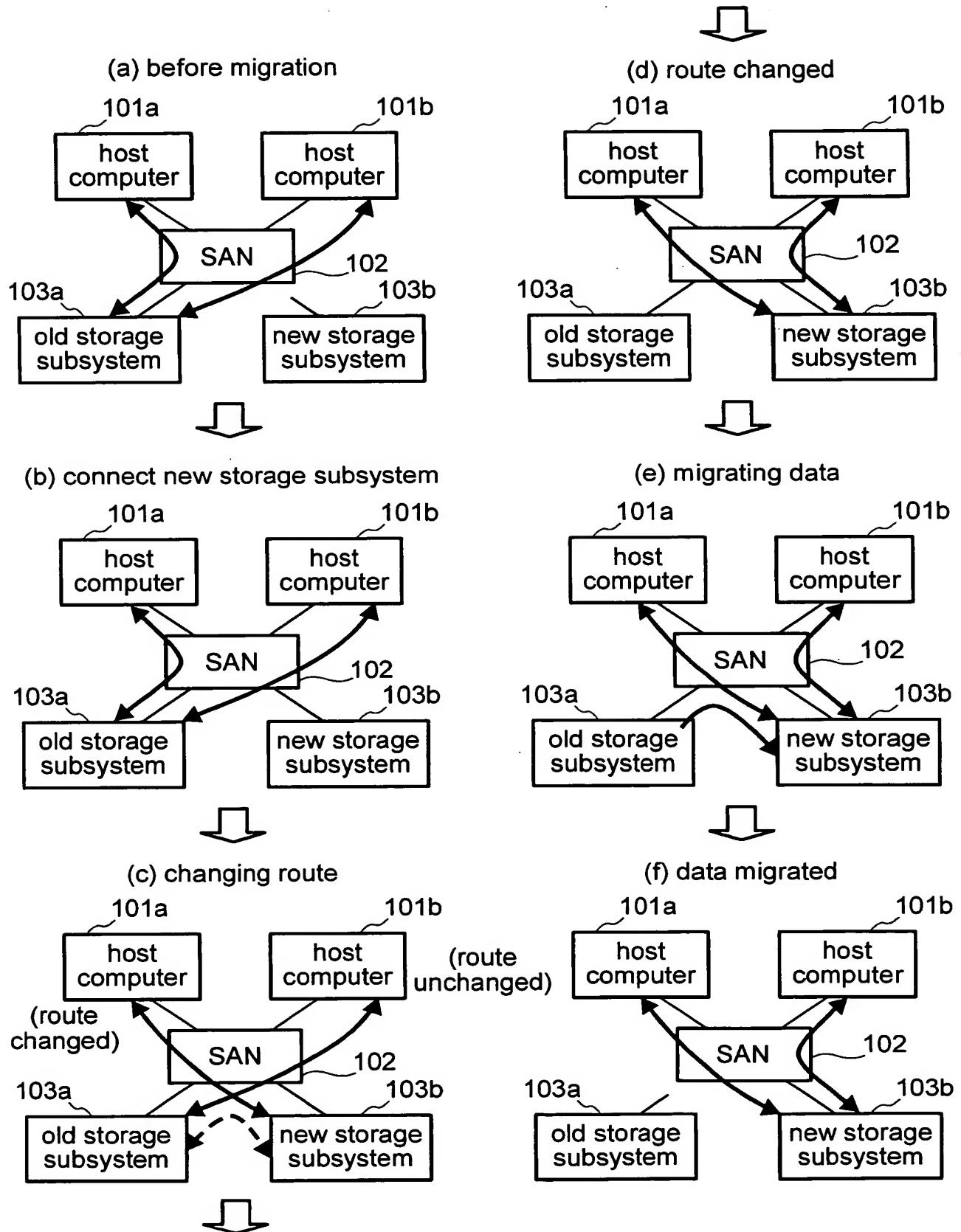
## FIG.2



## FIG.3



# FIG.4



# FIG.5

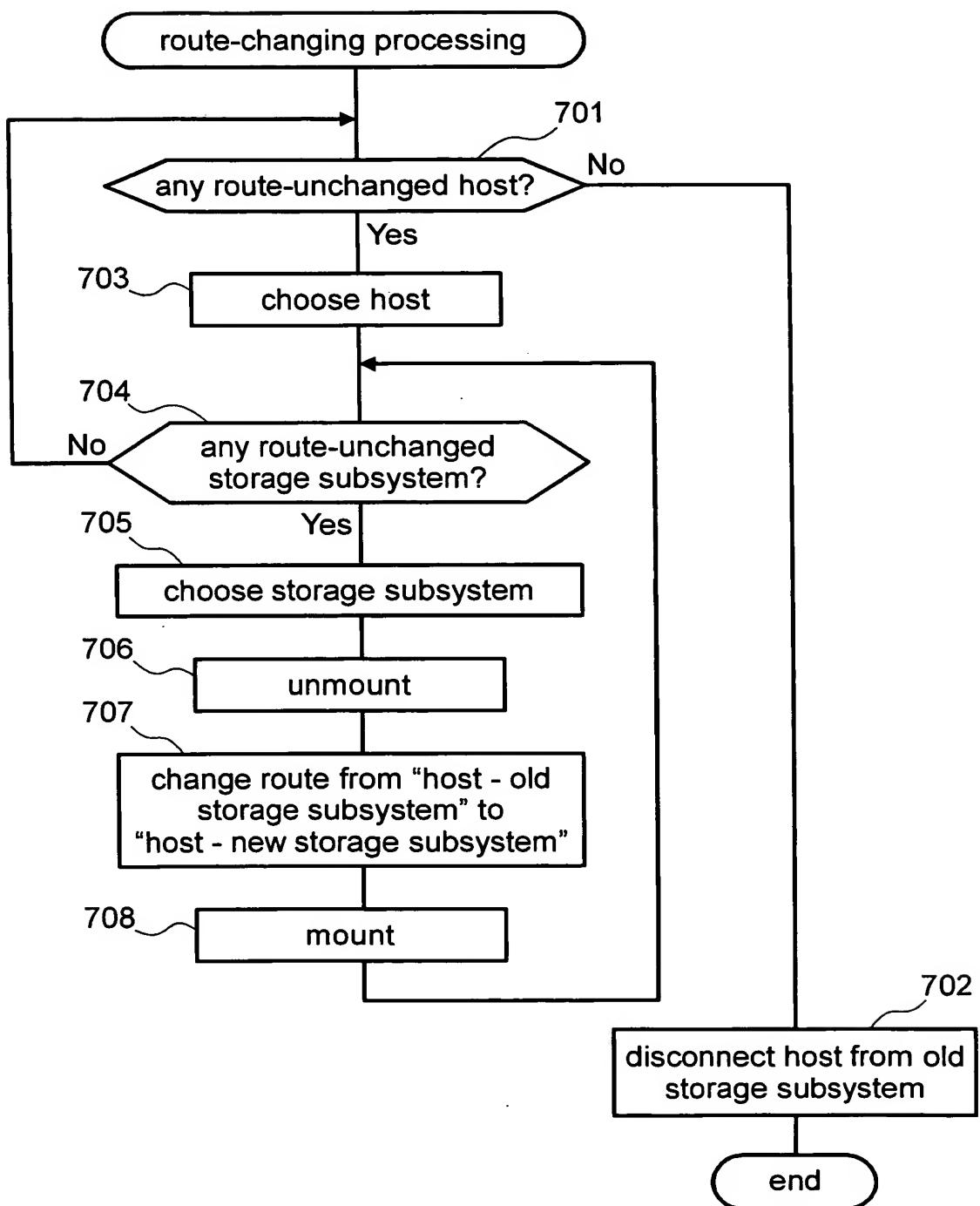
| # | migration status     | old storage subsystem |       | new storage subsystem                                    |                       |
|---|----------------------|-----------------------|-------|----------------------------------------------------------|-----------------------|
|   |                      | read                  | write | read                                                     | write                 |
| 1 | before route change  | old storage subsystem |       | inaccessible                                             |                       |
| 2 | route-changing phase | old storage subsystem |       | old→new                                                  | new→old               |
| 3 | data-migration phase | inaccessible          |       | data-unmigrated area: old→new<br>data migrated area: new | new storage subsystem |
| 4 | after data migration | inaccessible          |       | new storage subsystem                                    | new storage subsystem |

## FIG.6

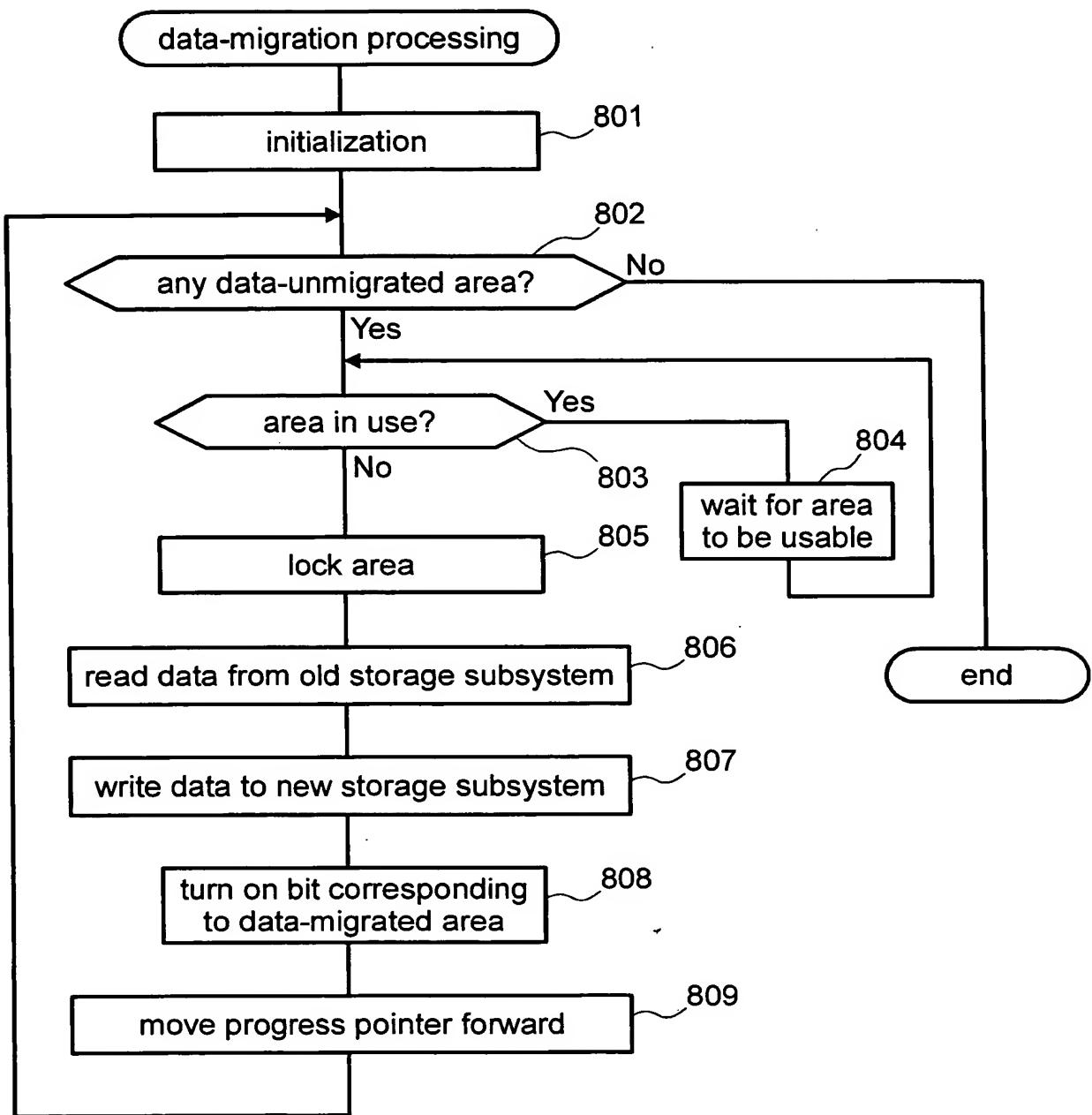
| Gr.ID | Status            | old storage subsystem ID | new storage subsystem ID | detail           |
|-------|-------------------|--------------------------|--------------------------|------------------|
| G00   | transferred       | S00-0000<br>S00-0001     | S08-0000<br>S08-0001     | /home<br>/usr    |
| G01   | data transferring | S01-0000                 | S09-0000                 | /DBTable         |
|       |                   | S01-0001                 | S09-0001                 | /log             |
|       |                   | S01-0002                 | S09-0002                 | /backup0         |
|       |                   | S01-0003                 | S09-0003                 | /backup1         |
| G02   | route changing    | S02-0000                 | S09-0004                 | /dept0           |
|       |                   | S02-0001                 | S09-0005                 | /dept1           |
|       |                   | S02-0002                 | S09-0006                 | /dept2           |
|       |                   | S02-0003                 | S09-0007                 | /dept5           |
| G03   | untransferred     | S02-0004<br>S02-0005     | S09-0008<br>S09-0009     | /test0<br>/test1 |

Annotations: Brackets labeled 601, 602, 603, 604, 605 point to the first four columns of the table. A bracket labeled 114 points to the 'detail' column.

# FIG.7

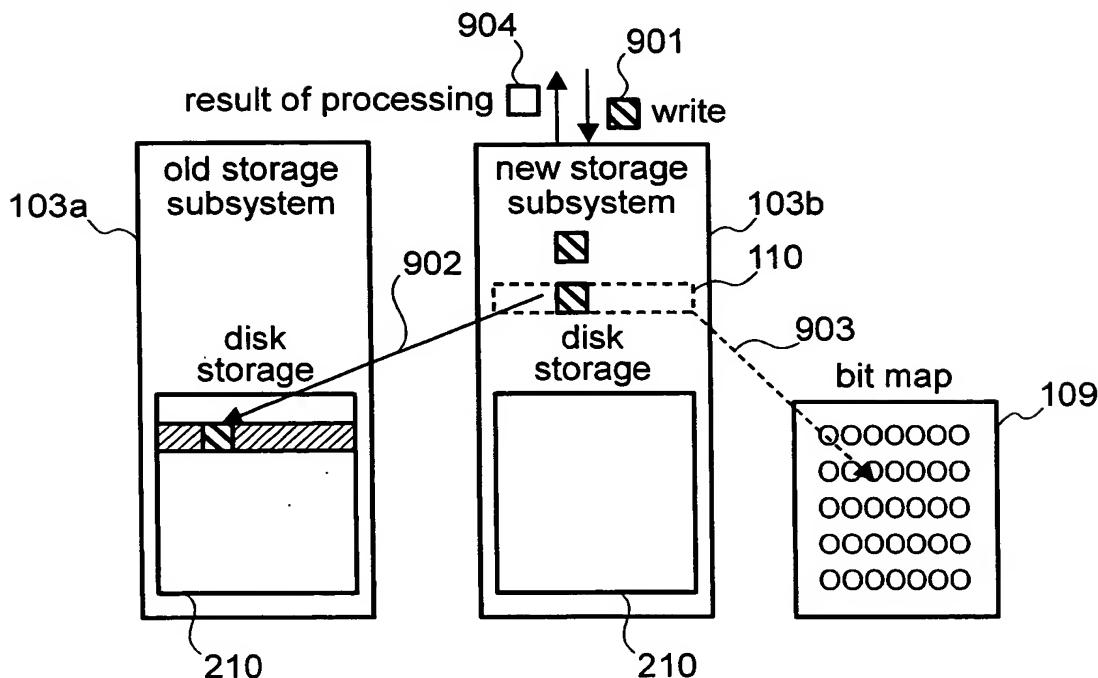


# FIG.8

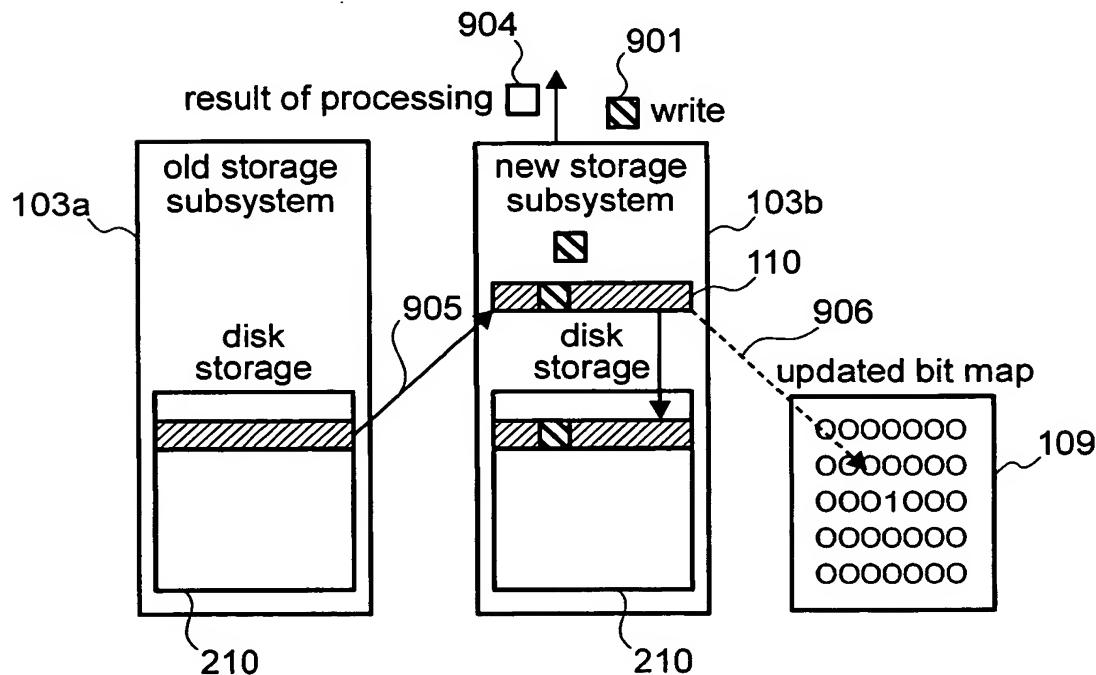


# FIG.9

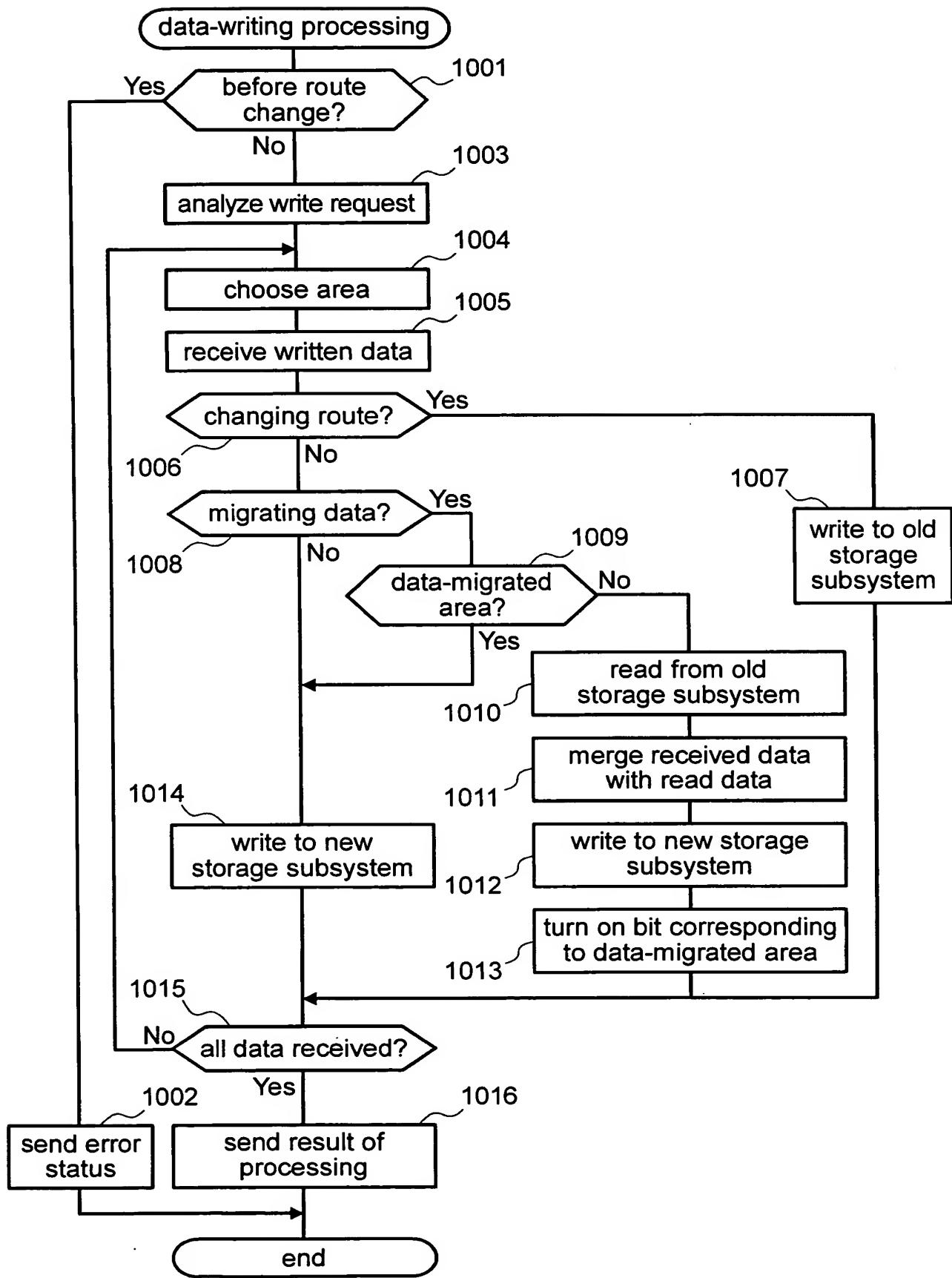
(a) route-changing phase



(b) data-migration phase (processing to data-unmigrated area)

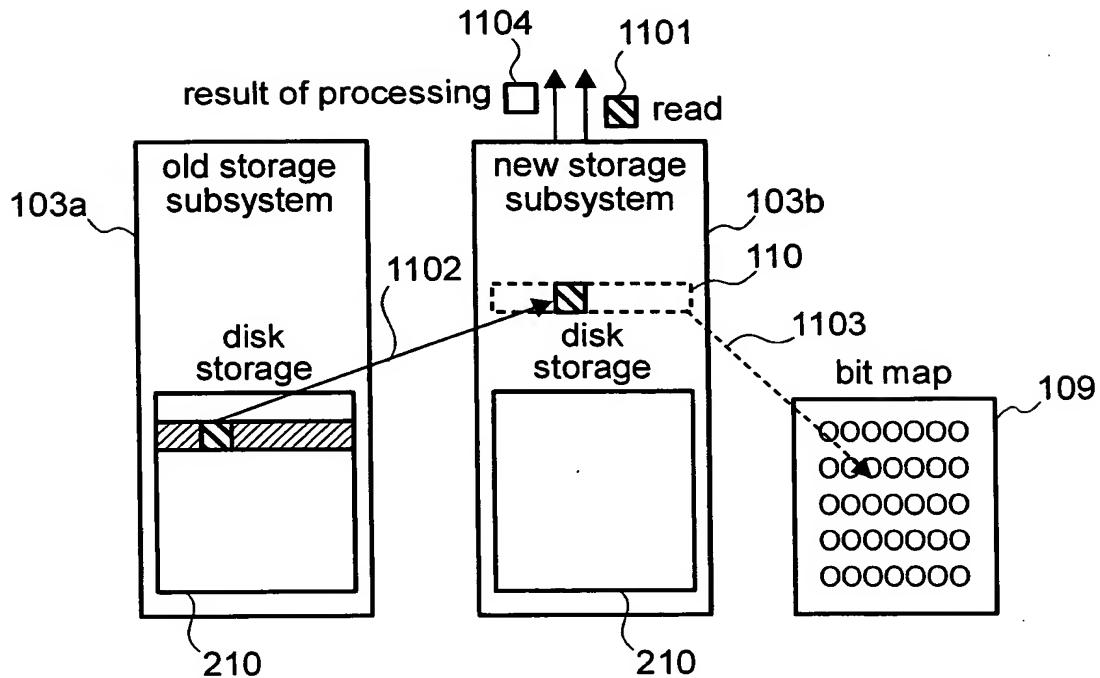


# FIG.10



# FIG.11

(a) route-changing phase



(b) data-migration phase (processing to data-unmigrated area)

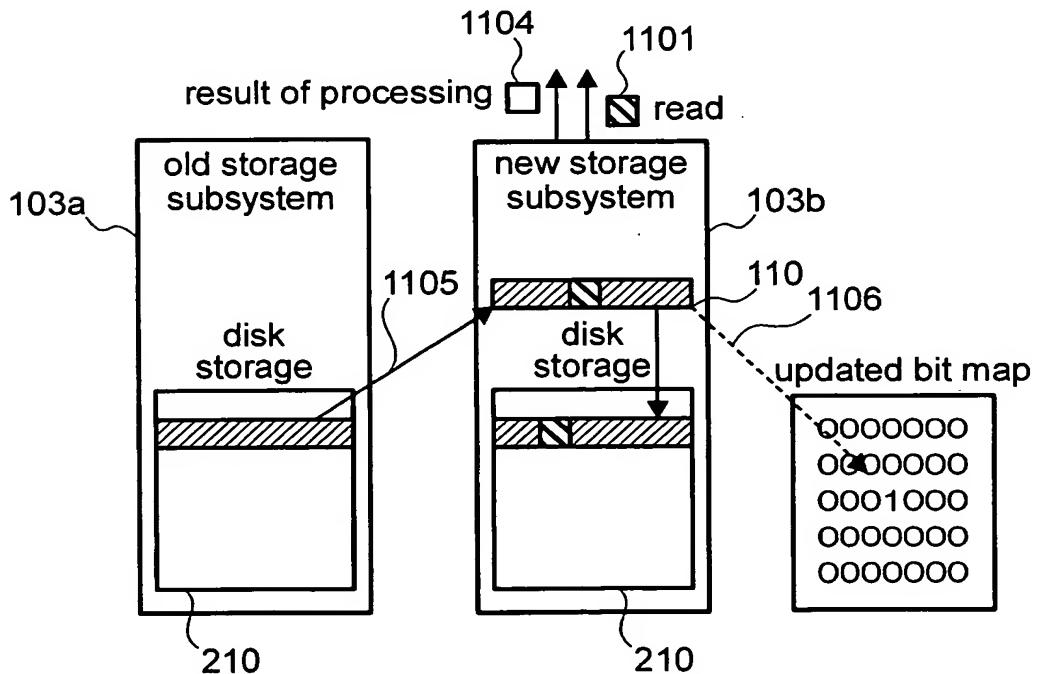
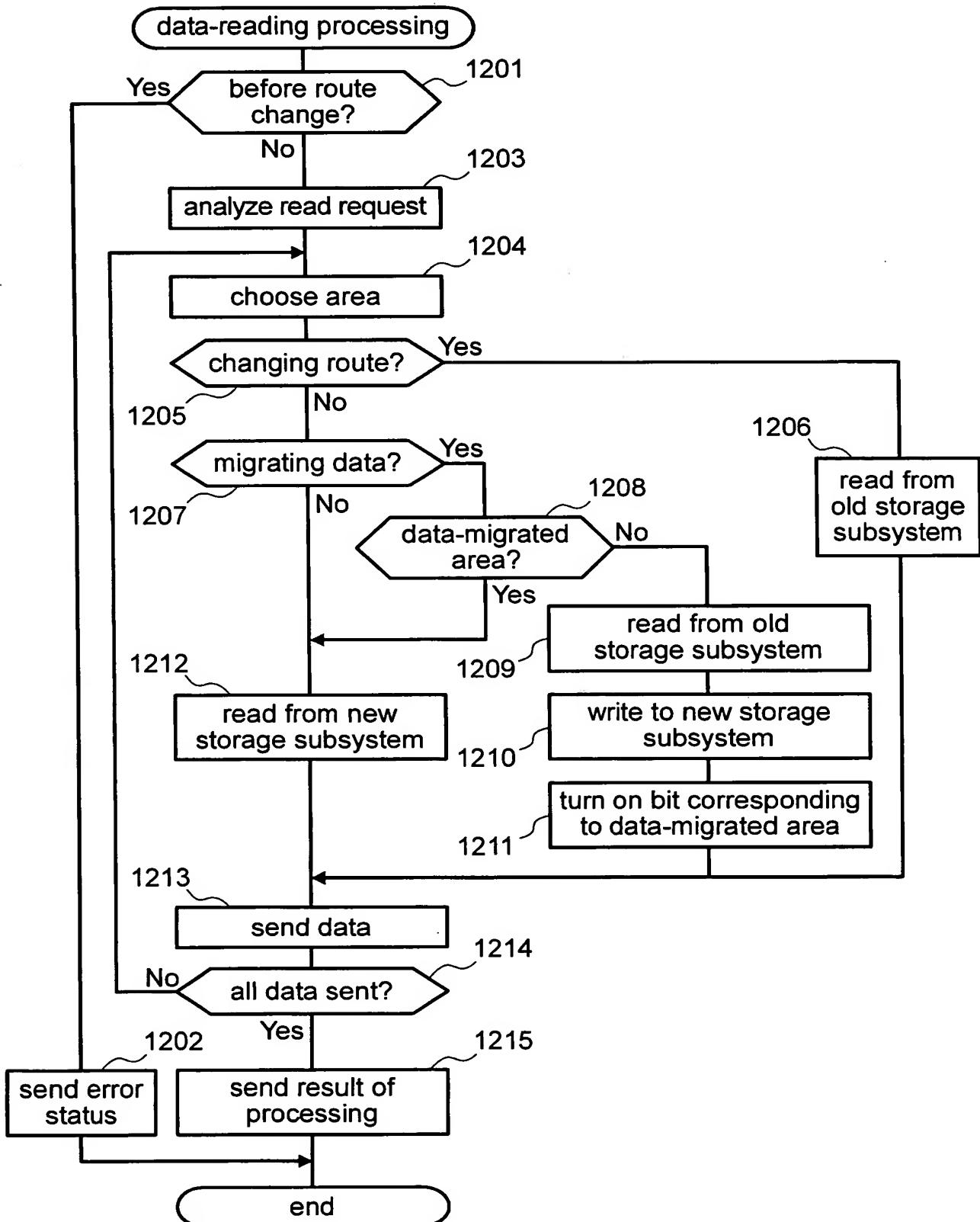
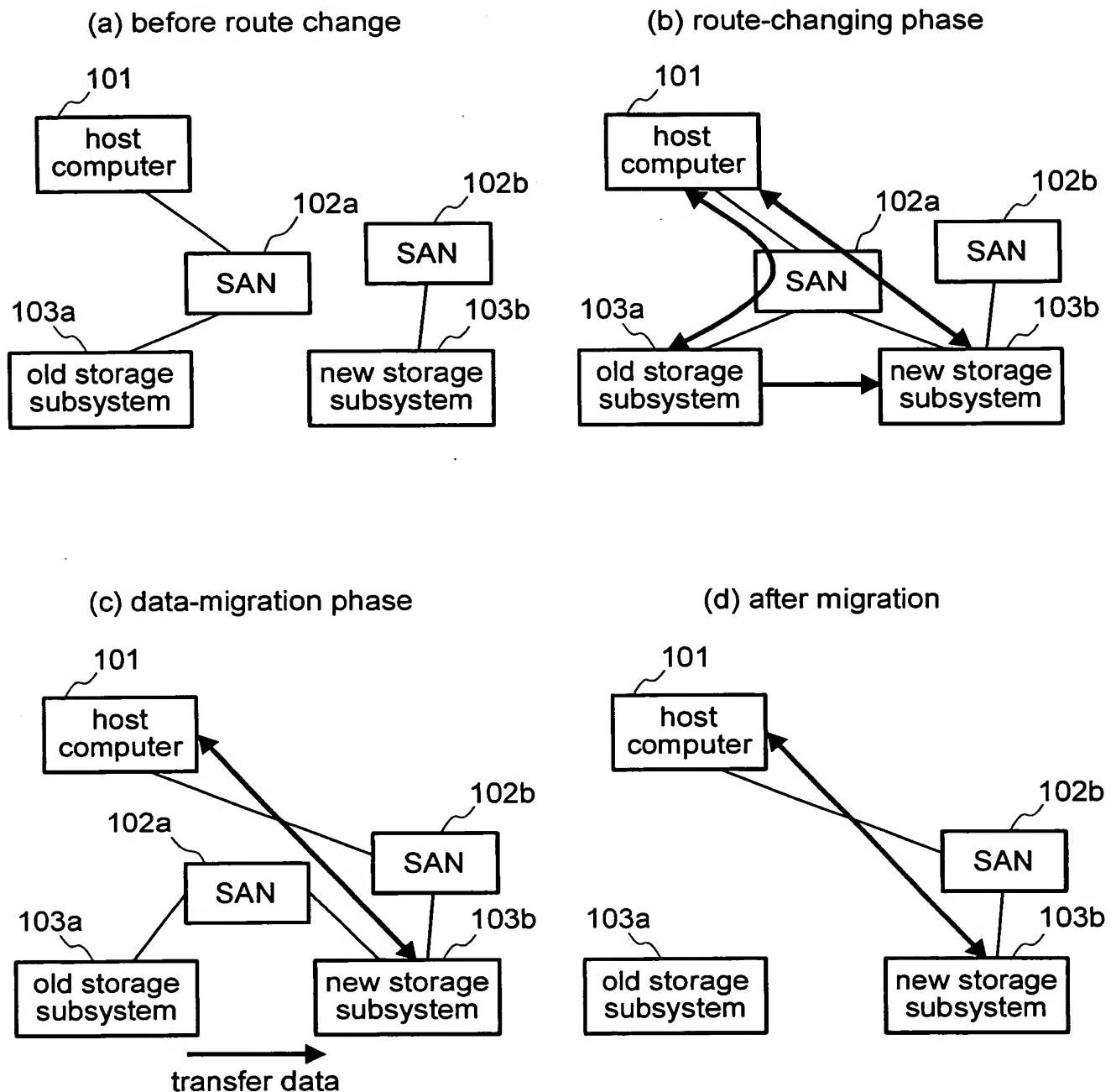


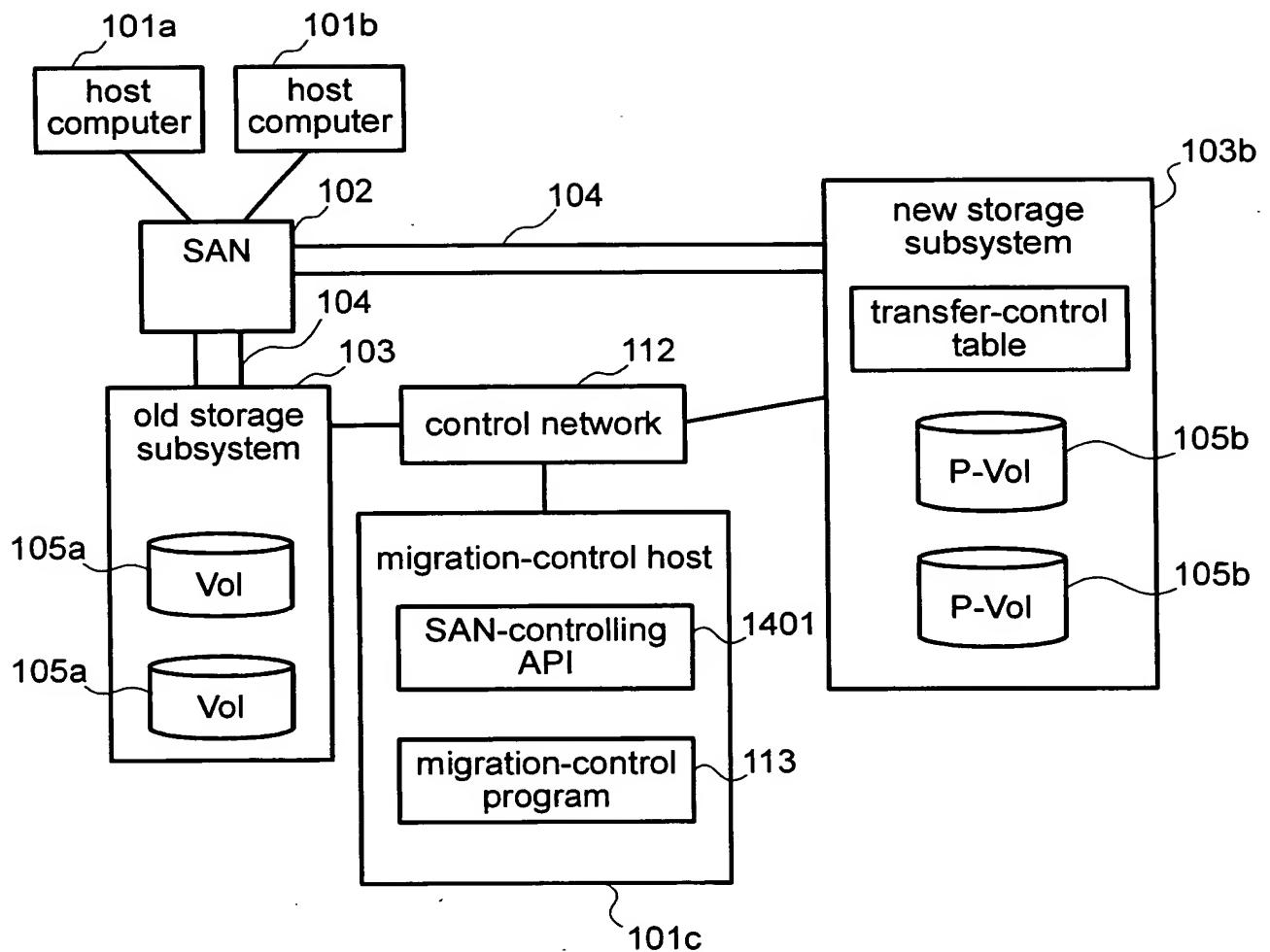
FIG.12



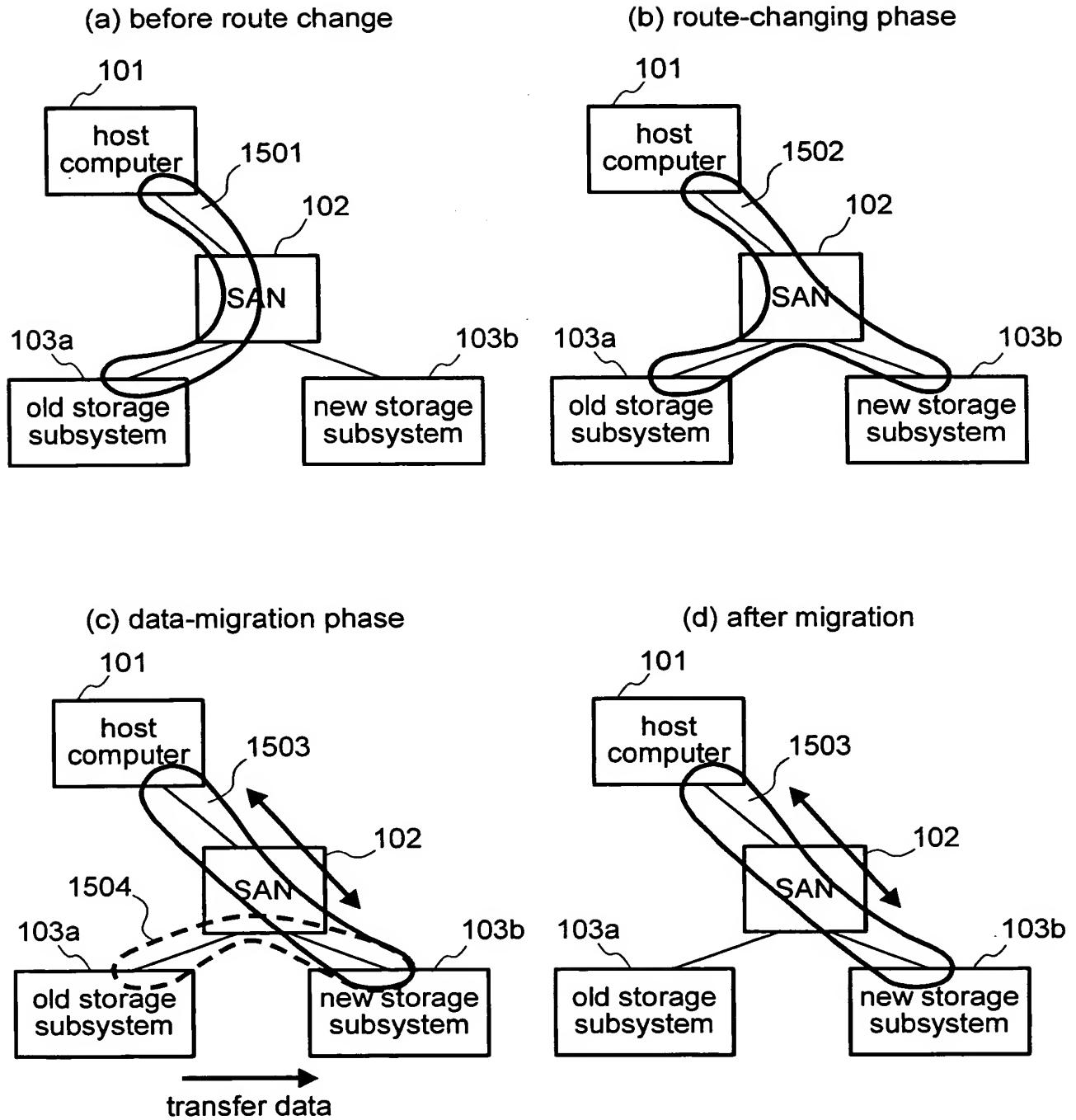
# FIG.13



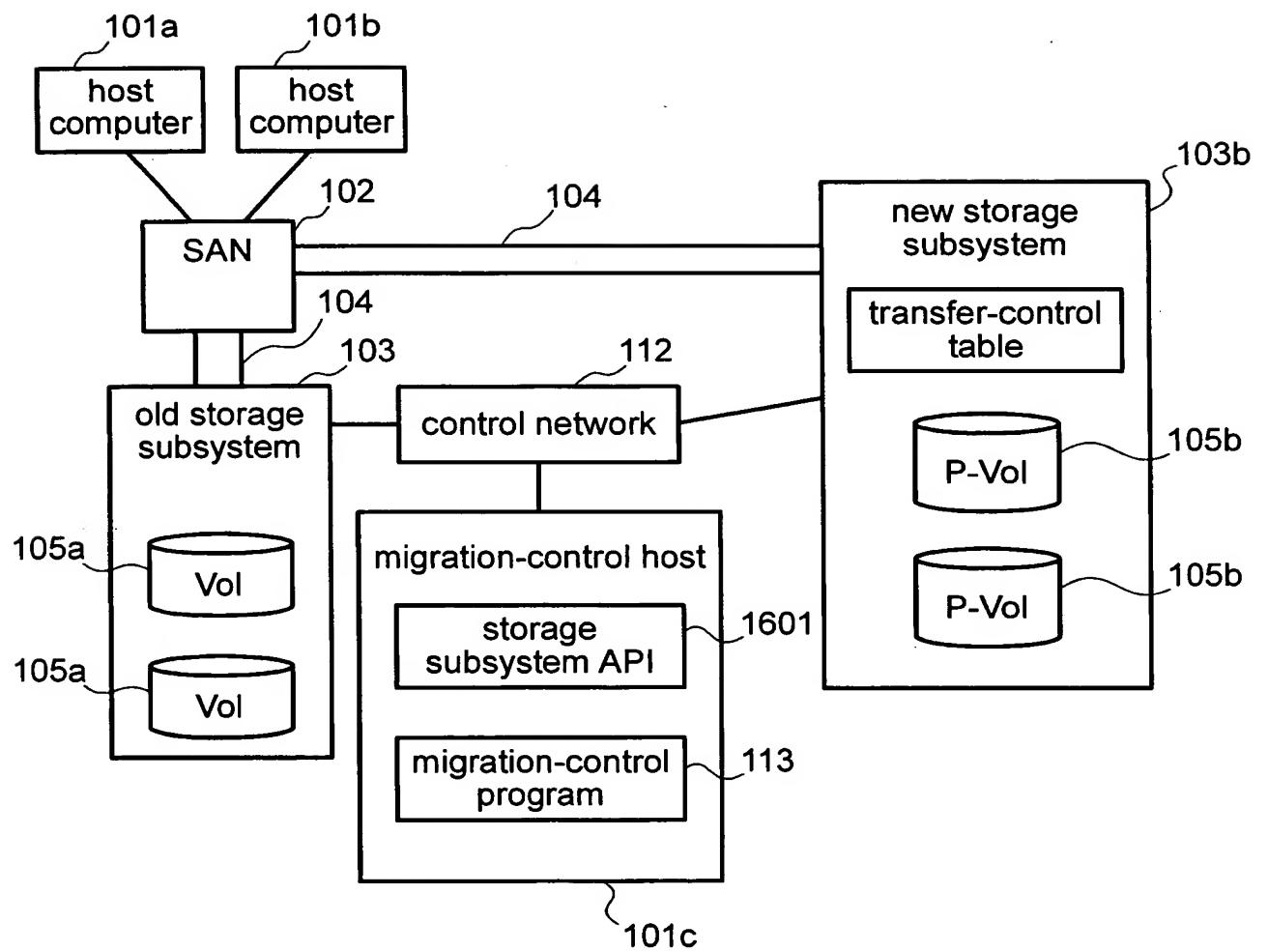
# FIG.14



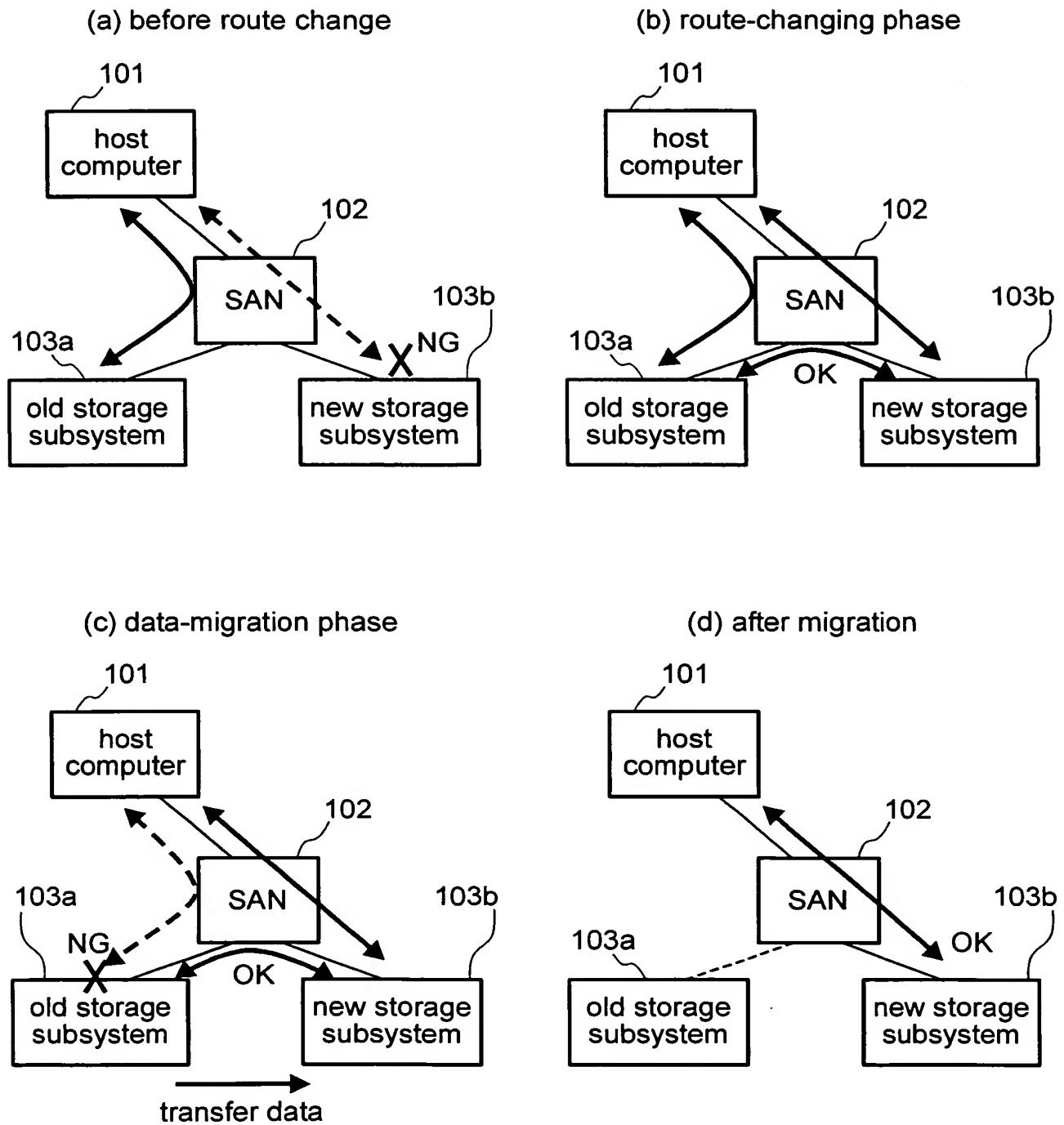
# FIG.15



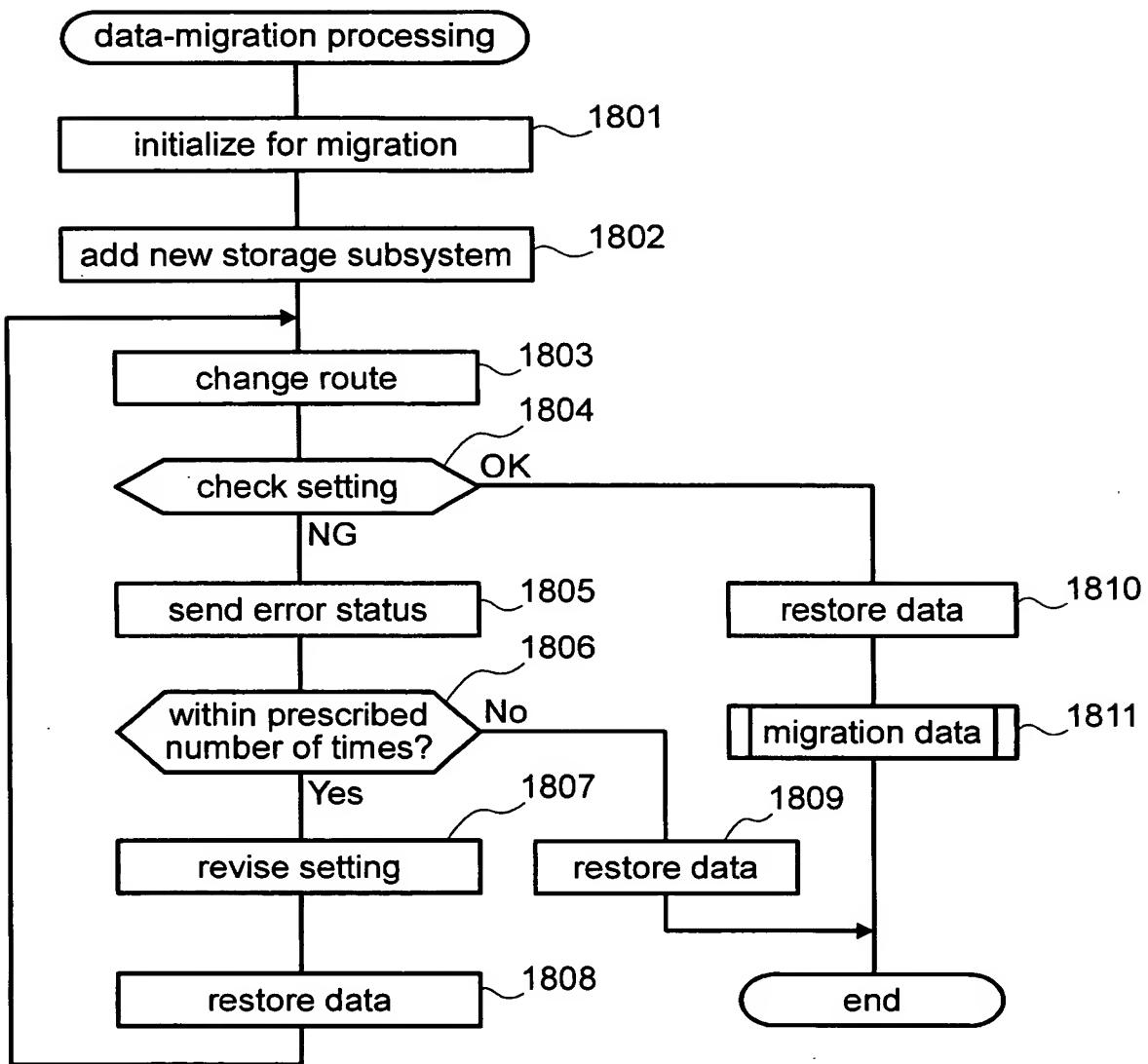
# FIG.16



# FIG.17



## FIG.18



# FIG.19

| # | migration status     | old storage subsystem |       | new storage subsystem                                    |                       |
|---|----------------------|-----------------------|-------|----------------------------------------------------------|-----------------------|
|   |                      | read                  | write | read                                                     | write                 |
| 1 | before route change  | old storage subsystem |       | inaccessible                                             |                       |
| 2 | debugging mode       | inaccessible          |       | not updated: old→new<br>updated: new                     | new storage subsystem |
| 3 | data-migration phase | inaccessible          |       | data-unmigrated area: old→new<br>data-migrated area: new | new storage subsystem |
| 4 | after data migration | inaccessible          |       | new storage subsystem                                    | new storage subsystem |

Timeline markers: 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908.

- 1901: Brackets for 1901-1902 and 1903-1904.
- 1903: Brackets for 1903-1904 and 1905-1906.
- 1905: Brackets for 1905-1906 and 1907-1908.